



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,791	02/18/2004	Takaaki Endo	00862.023466	9849

5514 7590 07/05/2007
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
----------	--------------

2622

MAIL DATE	DELIVERY MODE
-----------	---------------

07/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/779,791	Applicant(s) ENDO ET AL.	
	Examiner Yogesh K. Aggarwal	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 2,3/2,4/2,5/2,6/2,8,10,12,14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3/1,4/1,5/1,6/1,7,9,11,13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>03/09/2004, 07/19/2004</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

2. Claim(s) 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 defines a computer program for making a computer function embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed recording medium having a

Art Unit: 2622

program can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

Election/Restrictions

3. Applicant's election with traverse of Specie 3 of figure 14 associated with Claims 1, 3/1, 4/1, 5/1, 6/1, 7, 9, 11 and 13 is acknowledged. The traversal is on the ground(s) that the subject matter of different groups is sufficiently related that a thorough search for the subject matter of any one group would encompass a search for the subject matter of the other group. This is not found persuasive because the non-elected specie contains features, which would not be included in a class/subclass search or text search for the elected group.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3/1, 4/1, 5/1, 6/1, 7, 9, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Leberl et al. (US Patent # 6,122,078).

[Claim 1]

Leberl teaches an image processing method comprising:

Art Unit: 2622

setting a common coordinate system, which can be transformed from individual coordinate systems of a plurality of image sensing devices (e.g. X,Y,Z as shown in equations 2 and 3, col. 17 line 20 - col. 18 line 36, col. 22 line 48-col. 23 line 3, figure 16, also see col. 15 line 57-col. 16 line 7, figures 1-3) ;

estimating postures of at least one of the plurality of image sensing devices (e.g. parameter estimation circuit 343 as shown in figure 3, col. 17 lines 20-37);

calculating an estimated posture of the common coordinate system using at least one of the estimated posture of the plurality of image sensing devices (See equations 2 and 3, col. 17 line 20 - col. 18 line 36);

calculating a correction transform for reducing a shakiness of the common coordinate system using the estimated posture of the common coordinate system (col. 23 line 28-col. 24 line 26);

calculating a correction transform for reducing a shakiness of each of the plurality of image sensing devices using the correction transform (col. 26 line 66-col. 27 line 8, col. 20 line 12-col. 22 line 47, figures 16 and 17);

applying the corresponding correction transform to a sensed image which is sensed by each of the plurality of image sensing devices (col. 25 line 31- col. 26 line 6); and

composing a panoramic image by joining a plurality of transformed sensed images (col. 23 lines 28-42).

[Claims 3/1, 4/1 and 6/1]

Leberl et al. teaches wherein the correction transform for reducing a shakiness of each of the common coordinate system or the plurality of image sensing devices is a transform for correcting

Art Unit: 2622

yaw, roll, pitch angles and position (col. 23 line 43-col. 24 line 2, roll, tip, yaw and {alpha, phi, omega} represent position).

[Claim 5/1]

Leberl teaches wherein positions of the plurality of image sensing devices and common coordinate systems are also estimated upon estimating the postures (e.g. parameter estimation circuit 343 as shown in figure 3, col. 17 lines 20-37, See equations 2 and 3, col. 17 line 20 - col. 18 line 36).

[Claims 7, 9 and 11]

These are apparatus and computer storage claims corresponding to method claim 1. Therefore they have been analyzed and rejected based upon claim 1.

[Claim 13]

Leberl teaches an imaging apparatus comprising a plurality of image sensing devices (See figures 2 and 3, CCD arrays 211 and 215); a processor (figure 3, DSP 327 and 337) for composing a stabilized panoramic image; and a display device for displaying the panoramic image (col. 15 lines 57-col. 16 line 7, figures 1-3), wherein said processor (327 and 337) composes the panoramic image by performing the steps of:

setting a common coordinate system, which can be transformed from individual coordinate systems of a plurality of image sensing devices (e.g. X,Y,Z as shown in equations 2 and 3, col. 17 line 20 - col. 18 line 36, col. 22 line 48-col. 23 line 3, figure 16, also see col. 15 line 57-col. 16 line 7, figures 1-3) ;

estimating postures of at least one of the plurality of image sensing devices (e.g. parameter estimation circuit 343 as shown in figure 3, col. 17 lines 20-37);

Art Unit: 2622

calculating an estimated posture of the common coordinate system using at least one of the estimated posture of the plurality of image sensing devices (See equations 2 and 3, col. 17 line 20 - col. 18 line 36);

calculating a correction transform for reducing a shakiness of the common coordinate system using the estimated posture of the common coordinate system (col. 23 line 28-col. 24 line 26);

calculating a correction transform for reducing a shakiness of each of the plurality of image sensing devices using the correction transform (col. 26 line 66-col. 27 line 8, col. 20 line 12-col. 22 line 47, figures 16 and 17);

applying the corresponding correction transform to a sensed image which is sensed by each of the plurality of image sensing devices (col. 25 line 31- col. 26 line 6); and

composing a panoramic image by joining a plurality of transformed sensed images (col. 23 lines 28-42).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571)-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA
June 24, 2007

A handwritten signature in black ink, appearing to read 'Vivek Srivastava', is written over a horizontal line.

VIVEK SRIVASTAVA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600